

ABSTRACT

[0040] A method to enable the assessment of the growth rate and death rate of a micro-organism within a chosen time period in an environment of interest. The method is characterised in that

5 a) two reporter genes are introduced to said micro-organism wherein, the reporter genes used code for luminescent and/or fluorescent products and at least two of the following products: an essentially stable product produced in an essentially known proportion to the total amount of cells of said micro-organism that are or have been alive within said chosen time period; a product present in an essentially known proportion to the amount of cells alive at any
10 moment within said chosen time period; and an essentially stable product produced in an essentially known proportion to the total amount of cells of the said micro-organism that have died within said chosen time period, and said products can be measured through their luminescence and/or fluorescence;

 b) the said micro-organism is incubated and said luminescence and/or fluorescence is detected after said chosen time periods, and

 c) the growth and death rate of the said micro-organism is assessed based on at least two of the following: the known proportion of luminescence or fluorescence to the amount of cells alive after any said chosen time period; the known proportion of luminescence or fluorescence to the total amount of cells that are or have been alive within any said chosen time
20 period; and the known proportion of luminescence or fluorescence to the total amount of cells that have died within any said chosen time period.

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